

# Work Order ID 68213

Friday, April 08, 2011 11:50:52 AM



Page 1

Item ID:	D3628-3	Accept		Setup	Start	
Revision ID:					Stop	
Item Name:	Cupped Washer					
Start Date:	4/8/2011	Start Qty:	200.00		Cust Item ID:	
Required Date:	4/12/2011	Req'd Qty:	200.00		Customer:	

## Reference:

Approvals:	Process Plan:		Date:	11-04-8	Tooling:		Date:		Run	Start	
	QC:		Date:		SPC (Y/N):		Date:			Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3628	Rev B

100		0.00							
	PURCHASING								
Purchasing	Memo	0.00							
Purchasing	Issue P/O: 13836 <input type="checkbox"/> Email or Ship DXF file to vendor <input type="checkbox"/> Laser Cut								
	D3628-1 flat pattern and form as per Dwg D3628 <input type="checkbox"/> Possible Supplier:								
	GFI <input type="checkbox"/> Material release note is required								
110		0.00							
	Receive & Inspect for Damage & Mat'l Certs								
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								
120		0.00							
	QC6- Inspect dimensions to drawing								
QC	Memo	0.00							
Quality Control									

CL 4/10/08 (200)

4/10/08 (200)

Counts  
7200  
asp015

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 68213**

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Friday, April 08, 2011 11:50:52 AM

Item ID: D3628-3

Accept



Setup Start



Revision ID:

Stop



Item Name: Cupped Washer

Start Date: 4/8/2011 Start Qty: 200.00



Cust Item ID:

Required Date: 4/12/2011 Req'd Qty: 200.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 	Identify as per dwg & Stock Location: <u>72</u>	0.00							
Packaging	Memo	0.00				11/5/3			2002
Packaging									
140 	QC21- Final Inspection - Work Order Release	0.00							
QC	Memo	0.00							11/5/4
Quality Control									

11-05-3  
200

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Friday, April 08, 2011 1:11:06 PM

Page 1

Work Order ID: 68213



Parent Item: D3628-3



Parent Item Name: Cupped Washer



Start Date: 4/8/2011

Required Date: 4/12/2011

Start Qty: 200.00

Required Qty: 200.00

Comments: IPP Rev:A New Issue 07-05-28 JLM  
IPP Rev:B Removed Powder Coat 07-07-11 JLM

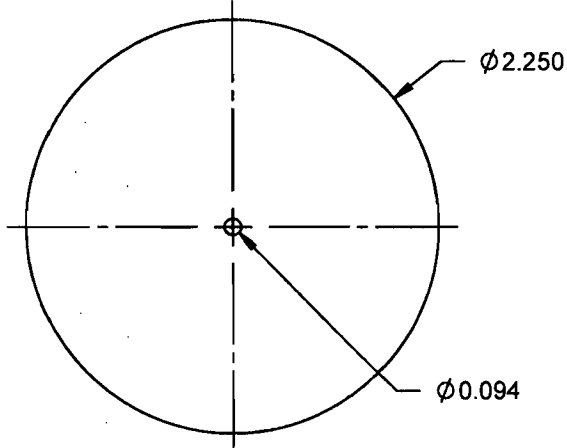
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3628-3P  CUPPED WASHER		Purchased	No				Each	0.0000		200		<i>Petty</i>	(200)



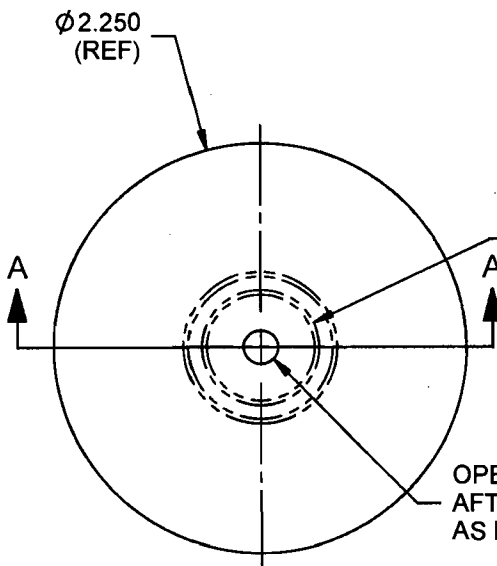
DESIGN <b>CB</b>	DRAWN BY <b>CB</b>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <b>CE</b>	APPROVED <b>[Signature]</b>	DRAWING NO. <b>D3628</b>	REV. B SHEET 1 OF 1
DATE <b>07.07.09</b>		TITLE <b>CUPPED WASHER</b>	SCALE 1:1
REV	DATE	DESCRIPTION	
A	07.06.08	NEW ISSUE	
B	07.07.09	REMOVE POWDER COAT	

**RELEASED**

07.07.09 **[Signature]**



**D3628-1F FLAT PATTERN**



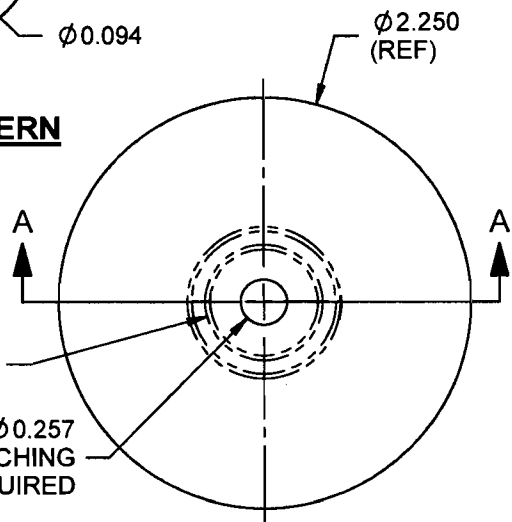
**D3628-1 CUPPED WASHER**  
(MAKE FROM D3628-1F)

PUNCH Ø0.64 x 0.16 DEEP

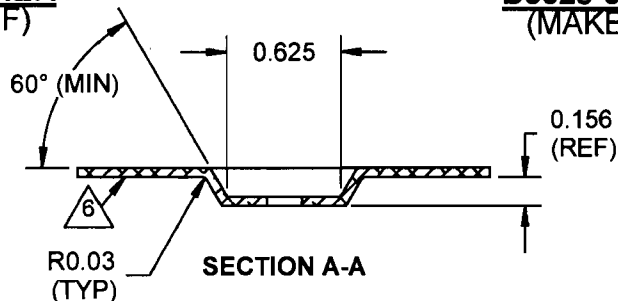
PUNCH Ø0.64 x 0.16 DEEP

OPEN TO Ø0.191  
AFTER PUNCHING  
AS REQUIRED

OPEN TO Ø0.257  
AFTER PUNCHING  
AS REQUIRED



**D3628-3 CUPPED WASHER**  
(MAKE FROM D3628-1F)



**SECTION A-A**

**NOTES:**

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SHEET, 18 GAUGE (0.050 THICK) PER MIL-S-5019 (REF DART SPEC M304S18GA)
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.010 MAX
- 6) IDENTIFY WITH DART P/N "D3628-1/-3" USING FINE POINT PERMANENT INK MARKER ON THE UNDERSIDE OF THE PART AS INDICATED
- 7) WHEN DRILLING OUT THE CENTRE HOLE AFTER PUNCHING, ENSURE THAT THE HOLE IS DRILLED CONCENTRIC TO THE CUPPED AREA, WITHIN 0.03

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CL11/04/08  
W10.68213



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

\*\*\*PO REPRINT\*\*\*

Purchase Order ID PO13836

Purchase Order Date 4/8/2011

PO Print Date 4/11/2011

Page Number 1 of 1

Order From :

VC-GFI001

GFI  
180 AVENUE LABROSSE  
POINTE CLAIRE, QC H9R 1A1  
CA

Contact Name

Vendor Phone 514 630 4877

Vendor Fax 514 630 4849

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr 10127-2607

Terms

Net 30

Currency

CAD

FOB

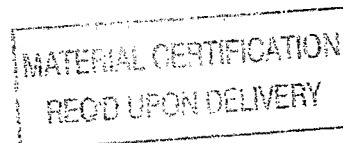
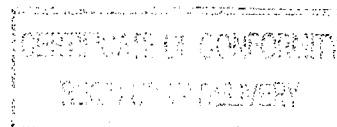
Destination-Collect

REVISED

Ship To :

DART AEROSPACE LTD 1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req. Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D3628-3P	CUPPED WASHER	4/29/2011 Yes	200.00 Each	Purolator ground	\$2.6500	\$530.00
		Special Inst:	AS PER DWG D3628 REV. B B68213				
						PO Total:	\$530.00



Change Nbr: 3

Change Date: 4/11/2011

CL  
No substitution or deviation without  
consent.  
Certificate of Conformity or Material  
Certification required when applicable



180 AVENUE LABROSSE  
POINTE-CLAIRE, QC, CANADA H9R 1A1  
TÉL.:(514) 630-4877 - FAX:(514) 630-4849

GFI est une division de Thomas & Betts Fabrication Inc. / GFI is a division of Thomas & Betts Manufacturing Inc.



# BON DE LIVRAISON / SHIPPING MEMO.

DATE DE LIVRAISON / SHIPPING DATE			N° DE BON DE LIVRAISON / SHIPPING MEMO NO.		PAGE
JR - DY	MO - MO	AN - YR			
27	04	11	0460867		1/1




VENDU À / SOLD TO

EXPÉDIÉ À / SHIP TO

DART AEROSPACE LTD  
1270 ABERDEEN ST.  
HAWKESBURY, ON  
K6A 1K7

DART AEROSPACE LTD  
1270 ABERDEEN ST.  
HAWKESBURY, ON  
K6A 1K7

CODE DE CLIENT CUSTOMER CODE		N° DE CONTRAT JOB NO.	VOTRE N° DE COMMANDE YOUR PURCHASE ORDER NO.	EXPÉDIÉ PAR SHIP VIA
DART                    GFI-0299		0230413	PO13836	
QUANTITÉ QUANTITY	N° DE PIÈCE PART NO.		DESCRIPTION	
200	D3628-3P		CUPPED WASHER	
			CERTIFICATE OF CONFORMANCE REQ	
MFG. JOB# 50230413-001 QTY 200				
				

EXPÉDITEUR / SHIPPER

N° DE BON DE LIVRAISON / SHIPPING MEMO NO.



REÇU PAR / RECEIVED BY

DATE

TOUTES LES RÉCLAMATIONS DOIVENT ÊTRE FAITES EN DEDANS DE 5 JOURS DE LA RÉCEPTION.  
ALL CLAIMS MUST BE MADE WITHIN 5 DAYS OF RECEIPT OF GOODS.



CERTIFICATE OF COMPLIANCE  
CERTIFICAT DE CONFORMITE



Membre de / A Member of **Thomas®Betts**

180 LABROSSE AVENUE  
POINTE CLAIRE, QC  
H9R 1A1

**DART AEROSPACE LTD**  
1270 ABERDEEN ST.  
HAWKESBURY, ON K6A 1K7

CERTIFICATE NO.	<u>3</u>	OUR JOB NO	<u>J0230413</u>	SHIPPING MEMO	<u>0460867</u>	
ITEM	QUANTITY	PURCHASE ORDER	PART NUMBER	REV	NAME	DWG ISSUE
<u>-</u>	<u>200 PCS</u>	<u>PO13836</u>	<u>D3628-3P</u>	<u>B</u>	<u>CUPPED WASHER</u>	<u>B</u>
MATERIAL		SUPPLIED BY		MAT. REL. NO.		
<u>AMS 5513 304 ANN</u>		<u>TW METALS / NORTH AMERICAN</u>		<u>H/N # 7MN1</u>		
PROCESS		PROCESSOR		RELEASE NOTE #		
1	<u>FIRST ARTICLE INSPECTION REPORT ON FILE</u>	<u>GFI</u>		<u>N/A</u>		
2	<u>REF. GFI MANUFACTURING JOB NUMBER J0230413-001 (200 PCS)</u>					
3						
4						
5						
6						
7						
8						
9						

WE HEREBY CERTIFY ALL THE PARTS COVERED BY THIS CERTIFICATE HAVE BEEN MANUFACTURED FROM MATERIAL SUPPLIED ON RELEASE NOTE SHOWN ABOVE AND THAT ALL PARTS HAVE BEEN INDIVIDUALLY INSPECTED AND CONFORM TO THE DRAWINGS AND PURCHASE ORDER REFERENCED ABOVE.

DATE 28 APRIL 2011

G.F.I. Q.C. REP. 





TUBESALES • WILLIAMS

**METALS**

TW METALS  
55 VANTAGE POINT DR.  
ROCHESTER, NY 14624

## CERTIFICATE OF COMPLIANCE

### FRAUD AND FALSIFICATION STATEMENT

- The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under federal statutes including federal law. Title 18 chapter 47.

### CERTIFICATE OF COMPLIANCE

- This certificate of compliance certifies that the material supplied on the purchase order number below complies in all respects with the material description.

### MERCURY FREE STATEMENT

- We certify that mercury, radium or alpha bearing instruments and/or equipment which might cause contamination have not been used in the manufacture, fabrication, assembly or testing of any material supplied by TW Metals. Switches, glass thermometers, standard cell and other items containing the above elements may be used, but they will be located so as not to constitute a contamination hazard.

PURCHASE ORDER#: 0078123  
ITEM# TS050481204A TW# 55130  
SHIPPER INVOICE#: 032 75052  
MATERIAL: 304  
SPECIFICATION: AMS551B  
SIZE: 1.050 48x120  
MANUFACTURING MILL: North American Stainless  
HEAT NUMBER: 7MNI  
PART NUMBER: TS050481204A  
QUANTITY: 1 sheet

  
TEST DEPARTMENT CLERK



# METALLURGICAL TEST REPORT

NORTH AMERICAN STAINLESS  
6870 HIGHWAY 42 EAST  
GHENT, KY 41045

6870 HIGHWAY 42 EAST

Certificate: 596487 2 Mail To:  
UNITED PERFORMANCE METALS  
3475 SYMMES ROAD  
Customer: 000018 001 HAMILTON, OH 45015

Ship To:  
UNITED PERFORMANCE METALS  
3475 SYMMES ROAD  
HAMILTON, OH 45015

Date: 11/19/2010 Page: 1

Steel: 302/304/304L

Finish: 2B

Your Order: 01017385

NAS Order: IN 0105370 01

Corrosion: ASTM A262/02aB; 180Bend-OK

## PRODUCT DESCRIPTION:

S/S COIL, C.R. ANNEALED & PICKLED; UNS 30400/30403/30200  
ASTM A240/10, A480/10, A666/10; ASME SA240/10, SA480/10, SA666/10  
CHEM ONLY ON FOLLOWING ASTM: A276/10, A479/10a, A484/10, A312/09  
CHEM ONLY ON FOLLOWING ASME: SA312/10, SA479/10  
AMS 5511H/5513J/5516P XM1K; MIL-5059D AMD3(X CRN MEAS); MIL-4043B  
NACE MR0175/01, MR0103/07; QQS766D-A X MAG PERM  
MIN. SOLUTION ANNEAL TEMP 1900F, WATER QUENCHED

## REMARKS:

Mat'l is Free of Mercury Contamination. No weld repairs.  
EN 10204:2004 3.1; QQS763F Cond A; RoHS Compliant  
Material is Free of Radioactive Contamination  
NAS Steel Making Process: EAP, AOD, & Cont. Casting  
Product Mfg. by a Quality Mgt. Sys. in Conf. w/ISO 9001  
\*Melted & Manufactured in the USA; Mat'l is DPA's Compliant

8 W05103

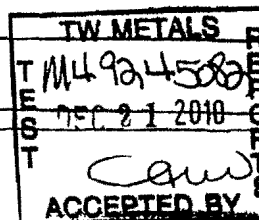
Product Id	Coil #	Skid # Thickness	Width	Weight	Length	Mark	Pieces	Commodity Code
047MN1 C	047MN1 C	0460	48.0000	16,840	COIL	1	1	

## CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

HEAT	CM	C	CR	CU	MN	MO	N	NI	P	S
7MN1	US	.0260	18.1670	.4720	1.8905	.3430	.0775	8.0900	.0335	.0010
		SI								
		.3600								

## MECHANICAL PROPERTIES

Product Id	Coil #	1 d	UTS	.2% VS	ELONG	Hard	T-11
		c i	KSI	KSI	%-2"	RB	Hard
047MN1 C	047MN1 C	F T	97.71	51.70	48.41	87.00	90.00



REVIEWED BY Q.C.  
Date 11/19/10 by GTI

NAS hereby certifies that the analysis on this certification is correct and the material meets the specifications stated.

QC ENGINEER

ERIC HESS

11/19/2010

Description: 304 ANN. 045-052  
Customer: TW METALS  
Shipper: 12/17/2010  
Heat: 7MN1

Size: 48 X 120  
P.O. # 44245062  
Plate 55130  
Serial # 01157134  
Quantity: 32

UNITED PERFORMANCE METALS  
This is to certify that in accordance with the records in our files the material shipped on your purchase order conforms to the following:  
3475 Symmes Road Hamilton, OH 45015

Initials: [Signature]  
Date: 11/19/10

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SHEET  
ANNEALED  
2B FINISH

SPECIFICATION: MIL-S-5059  
OR AMS 5513 (304)  
OR AMS 5524 (316)  
OR ASTM A240  
OR ASME SA240

PART NUMBER: M304S TT GA  
GA

WHERE "TT" = GAUGE THICKNESS

EG. 16 GAUGE SS SHEET = M304S16GA

GAUGE THICKNESS REFERENCE:

GAUGE	NOM. THICK. (IN)	THICKNESS RANGE (IN)
26	0.01875	0.0178 - 0.019
25	0.021875	0.0199 - 0.023
24	0.025	0.024 - 0.026
23	0.028125	0.027 - 0.029
22	0.03125	0.030 - 0.032
21	0.034375	0.033 - 0.035
20	0.0375	0.036 - 0.040
19	0.04375	0.041 - 0.046
18	0.050	0.047 - 0.052
17	0.05625	0.053 - 0.058
16	0.0625	0.059 - 0.065
15	0.0703125	0.066 - 0.072
14	0.078125	0.073 - 0.083
13	0.08375	0.084 - 0.098
12	0.109375	0.099 - 0.114
11	0.125	0.115 - 0.130
10	0.140625	0.131 - 0.145
9	0.15625	0.146 - 0.160
8	0.171875	0.161 - 0.176

REFERENCE ONLY

RELEASED  
09/06/01

B	REFORMAT DWG. ADD ASTM/ASME SPECS (ZN D8-1), ADD GAUGE REF (C8-1), REF PAR 08-020A	CP	09.06.01
A	NEW ISSUE	DS	01.09.24
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	09.06.01		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. M304S	REV. B
TITLE 304/316 SS SHEET	SHEET 1 OF 1
	SCALE NTS

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